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09/897,028	07/03/2001	Hisashi Hotta	018995-445	9172

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EXAMINER	
WALKE, AMANDA C	

ART UNIT	PAPER NUMBER
1752	4

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/897,028	Applicant(s) HOTTA ET AL.	
	Examiner Amanda C Walke	Art Unit 1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 July 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The present claim 1 claims a preparation method for a printing plate comprising forming a "presensitized" plate by coating a photo or thermo sensitive layer on an aluminum support, then developing the "presensitized" plate. Firstly, there is no exposure step claimed, however it is clear from the specification that there is an exposure step performed, and it is well known that there would be an exposure step before the development step because if there was not, the entire layer would be washed away be the developer and there would be no pattern. Therefore the claim has been interpreted as having an exposure step as it appears clear from the specification that an exposure step is being performed prior to the development step. That being said, it is confusing as to how the "presensitized" plate could be developed because once the "presensitized" plate is exposed to form the desired pattern the exposed areas are no longer "presensitized". Clarification is needed. For purposes of examination, the claim has been interpreted as requiring the steps of taking a presensitized plate, exposing it, the developing the exposed plate.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Tomita et al (5,110,710).

Tomita et al disclose a light sensitive lithographic printing plate comprising a support that has been treated with an aqueous solution containing nitrites. The support comprises aluminum or an aluminum alloy that has been pre-treated by an aqueous solution comprising at least one of nitric acid, nitrate, nitrous acid, and nitrite. Preferred examples of the compound used in the solution include ammonium nitrite, and nitrite metal salts as described in column 3, lines 10-35. These compounds are present in the solution in an amount of 0.01 to 2% by wt, and the examples employ nitrite group-containing compounds. The support has coated thereon a light sensitive layer that is exposed then developed. The developer employed is an alkali aqueous solution that preferably comprises one of 8 disclosed compounds, 6 of which are not silicate-containing compounds, thus it is specifically contemplated by the reference to employ a developer that does not contain a silicate (column 10, lines 5-15). The plate of Tomita results in high press life of the plate and non-image portions which are free of stain (column 2, lines 35-42).

With respect to the limitations for the formulas, it is noted by the examiner that the presently claimed formulas need only be met when the at least one compound is either a fluorine-containing compound or a phosphorus-containing compound. However, it is noted by the examiner that although there is no amount-dependent formula claimed for the nitrite group-containing compound, that the reference appears to employ the nitrite group-containing

compounds in amounts falling within the ranges disclosed by the instant specification as being suitable for use in the instant invention (see page 5 of the present specification).

5. Claims 1, 3, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Dhillon et al (5,834,129).

Dhillon et al disclose a grained and anodized aluminum support for lithographic printing plates. Prior to the coating/ deposition of the photosensitive layer, exposure, and development, the support is anodized by a solution comprising phosphoric acid in a concentration of about 100 to 300 g/l, and treated with a solution that preferably comprises metal fluorides, alkali silicates, or K_2ZrF_6 in a preferred concentration of 0.01 to 10 % by volume (column 3, lines 1-32 and column 4, lines 26-36).

With respect to the limitation of the present claim 1 for the formulas that should be met when a fluorine-containing compound is used or when a phosphorous atom containing compound is used, on page 10 of the specification it is taught that the fluorine-containing compound should be present in an amount of .001 to 100 g/l and on page 11, it is taught that the phosphorous atom containing compound should be present in an amount of 50-100 g/l. Given the teachings of the reference that the fluorine-containing compound (K_2ZrF_6) and the phosphoric acid are used in amounts that appear fall within the range taught by the present specification as being amounts that would cause the presently claimed formulas to be met, it is the position of the examiner that when prepared, the aluminum support would have a surface which would satisfy the two presently claimed formulas.

The developer may comprise phosphates, silicates, or metabisulfites, alkali metal hydroxides, and surfactants, buffers, and other ingredients well known in the art (column 4, lines 57-65). The developer in the examples comprises potassium hydroxide (and no silicate).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walls (4,502,925) or Mellan et al (2,946,683) in view of Nakanishi et al (5,837,425).

Walls discloses a process for aluminum surface preparation which includes degreasing the plate, then chemically etched by immersing the plate in an aqueous solution comprising a nitric acid and/or hydrochloric acid and an inorganic fluorine containing acid or salt thereof which is preferably HF, $HSiF_6$, HPF_6, HBF_4, K_2ZrF_6, K_2TiF_6, NH_4F, or NH_4HF_2. The HCL or HNO_3 is present in an amount of up to 25 % by wt of the solution and the fluorine containing compound is present in an amount of 1 to 25 % by wt of the aqueous solution (column 2, line 55 to column 3, line 3). Following this treatment, the aluminum support is then electrolytically grained by a solution comprising nitric acid and/or hydrochloric acid. The solution may also comprise hydrogen peroxide, aluminum nitrate, or aluminum chloride. The examples of the reference employ the fluorine-containing compound in an amount of 50 g/L to 100 g/L (see table in column 7). Given that the reference provides only eight specific examples of the fluorine-

containing compound all are specifically contemplated by the reference. One compound, HPF_6, meets the limitations of both claims 3 and claims 4, and as mentioned above, would have been specifically contemplated for use in the practice of the invention. The plate of Walls results in increased wettability and increased surface area (column 2, lines 6-19).

With respect to the limitation of the present claim 1 for the formulas that should be met when a fluorine-containing compound is used or when a phosphorous atom containing compound is used, on page 10 of the specification it is taught that the fluorine-containing compound should be present in an amount of .001 to 100 g/l and on page 11, it is taught that the phosphorous atom containing compound should be present in an amount of 50-100 g/l. Given the teachings of the reference that the fluorine-containing compound (one of which also meets both the limitations for the fluorine-containing compound and for the phosphorous-containing compound) are used in amounts that fall within the range taught by the present specification as being amounts that would cause the presently claimed formulas to be met, it is the position of the examiner that when prepared, the aluminum support would have a surface which would satisfy the two presently claimed formulas.

Lastly, with respect to the limitation requiring that the developing solution not contain a silicate, the reference is silent with respect to the specific type of developer employed in the method of using the support to produce a printing plate.

Mellan et al disclose a presensitized printing plate and a method for preparing the plate comprising the steps of providing an aluminum support, pretreating the support with an acid such as phosphoric acid, treating the support with a solution comprising potassium zirconium fluoride, then treated with hot water to complete the reaction, followed by coating a layer of

light sensitive material on the support , drying the plate, exposure, then finally development (column 1, line 32-column 2, line 11 and the example beginning in column 4, line 27). The K_2ZrF_6 is preferably employed in an amount of 0.1 to 8.7 % by weight and the phosphoric acid in an amount of 0.1 to 5 % by weight of their respective solutions (column 2, lines 65-67 and column 3, lines 30-35).

With respect to the limitation of the present claim 1 for the formulas that should be met when a fluorine-containing compound is used or when a phosphorous atom containing compound is used, on page 10 of the specification it is taught that the fluorine-containing compound should be present in an amount of .001 to 100 g/l and on page 11, it is taught that the phosphorous atom containing compound should be present in an amount of 50-100 g/l. Given the teachings of the reference that the fluorine-containing compound (K_2ZrF_6) and the phosphoric acid are used in amounts that appear fall within the range taught by the present specification as being amounts that would cause the presently claimed formulas to be met, it is the position of the examiner that when prepared, the aluminum support would have a surface which would satisfy the two presently claimed formulas.

Lastly, with respect to the limitation requiring that the developing solution not contain a silicate, the reference is silent with respect to the specific type of developer employed in the method of using the support to produce a printing plate.

Nakanishi et al disclose a developer suitable for use in developing both positive and negative working photosensitive lithographic printing plates. The developer comprises at least one compound selected from the group consisting of sugars, oximes, phenols, and fluorinated alcohols which have a buffering effect in the pH range of 11.5 to 13.5 and at least one alkali agent that may

be sodium hydroxide, potassium hydroxide, or lithium hydroxide. Sodium hydroxide and potassium hydroxide are used in the examples as is sucrose (saccharose), whish is listed in the present specification as a preferred non-reducing sugar (abstract, column 3, line 16 to column 5, line 65 and the examples). The reference teaches that this developer is excellent in consistency in developability but also does not generate solid matter when used in an automatic processor (column 3, lines 24-17).

Walls' and Mellan et al's teachings of the preferred developer is very broad and simply states that the exposed plates are developed.

Therefore, given the teachings of the secondary reference and the broad teachings of Walls, it would have been obvious to one of ordinary skill in the art to prepare a printing plate by the method of Walls choosing to develop the negative working plate by employing the developer solution of Nakanishi et al to achieve excellent consistency and developability with reasonable expectation of achieving a plate having increased surface area and improved wettability.

Therefore, given the teachings of the secondary reference and the broad teaching of Mellan, it would have been obvious to one of ordinary skill in the art to prepare a printing plate by the method of Mellan choosing to develop the negative working plate by employing the developer solution of Nakanishi et al to achieve excellent consistency and developability with reasonable expectation of achieving a plate having a long shelf life and detailed, clear images.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Dhillon, or Tomita et al in view of Nakanishi et al (5,837,425).

Dhillon et al and Tomita et al have been discussed above but fail to teach the use of a developing solution that comprises at least one sugar selected from non-reducing sugars and at least one base (except for silicate) having a pH ranging from 9.0 to 13.5.

Nakanishi et al disclose a developer suitable for use in developing both positive and negative working photosensitive lithographic printing plates. The developer comprises at least one compound selected from the group consisting of sugars, oximes, phenols, and fluorinated alcohols which have a buffering effect in the pH range of 11.5 to 13.5 and at least one alkali agent that may be sodium hydroxide, potassium hydroxide, or lithium hydroxide. Sodium hydroxide and potassium hydroxide are used in the examples as is sucrose (saccharose), whish is listed in the present specification as a preferred non-reducing sugar (abstract, column 3, line 16 to column 5, line 65 and the examples). The reference teaches that this developer is excellent in consistency in developability but also does not generate solid matter when used in an automatic processor (column 3, lines 24-17).

The Tomita et al reference teaches in column 10, lines 5-15, that a preferred developing solution may comprise an alkali aqueous solution that preferably comprises one of 8 disclosed compounds, but further teaches that other known compounds may be employed (column 10, lines 5-19).

Therefore, given the teachings of the secondary reference and the teaching of Tomita that the developing solution may contain compounds that are known other than their preferred compounds, it would have been obvious to one of ordinary skill in the art to prepare a printing plate by the method of Tomita et al choosing to develop the plate by employing the developer solution of Nakanishi et al to achieve excellent consistency and developability with reasonable

expectation of achieving a plate having high press life of the plate and non-image portions which are free of stain.

Dhillon et al teaches that the developer may comprise phosphates, silicates, or metabisulfites, alkali metal hydroxides, and surfactants, buffers, and other ingredients well known in the art (column 4, lines 57-65). The developer in the examples comprises potassium hydroxide (and no silicate).

Therefore, given the teachings of the secondary reference and the broad teaching of Dhillon et al that the developer (which preferably comprises the potassium hydroxide base) may contain other known additives, it would have been obvious to one of ordinary skill in the art to prepare a printing plate by the method of Dhillon choosing to develop the negative working plate by employing the developer solution of Nakanishi et al comprising the combination of the metal hydroxide base and the non-reducing sugar to achieve excellent consistency and developability with reasonable expectation of achieving a plate having greater image contrast.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hasegawa et al (4,225,398), Frass et al (4,482,444), Mohr (4,566,960), Uesugi (5,873,771), and Uesugi et al (6,475,630) are cited as being cummulative to the art relied upon above. Tsubai et al (4,238279) teaches the use and amounts of a nitrous group-containing compound and a phosphorous atom containing compound,, but for a post-treatment solution for the plate that is coated with a light sensitive layer. Pliefke (4,614,571) teaches similar compounds and amounts, but is drawn towards a method of preparing a steel-based support. Gray (4,360,401), Platzer eta l (5,900,345), Nishio et al (6,010,816), Mori (6,015,649), Mori

(6,045,681), Hattori (6,071,674), Takita et al (6,114,089), Maemoto (6,258,510), and Uesugi (6,340,426) are cited for their general teaching of compounds employed in the pretreatment and preparation of aluminum supports suitable for use in the manufacture of lithographic printing plates.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda C Walke whose telephone number is 703-305-0407. The examiner can normally be reached on M-R 5:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Baxter can be reached on 703-308-2303. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Amanda C Walke
Examiner
Art Unit 1752

ACW
February 12, 2003

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